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This working paper is a draft in progress that is posted online to stimulate discussion and critical comment. The purpose is to mine reader's additional ideas and contributions for completion of a final document.

The views expressed herein are those of the authors and do not necessarily reflect the views of Ateneo de Manila University.

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1. Introduction

A strong legal infrastructure is essential in economic development. An efficient judicial system serves to secure property rights and enforce contracts, both of which are critical institutional underpinnings of a well-functioning market economy (OECD, 2013). Legal certainty incentivizes people to save and invest in the resources within the country as it safeguards the returns from these activities. On the other hand, proper contract enforcement invites parties to forge stable economic ties; and ideally foregoing transaction costs associated with red tape and discouraging opportunistic contract-breaking behavior. Thus, judicial systems are often designed to promote accountability, competition, innovation, and investment across industries.

As mentioned in Former Chief Justice Hilario Davide's Action Program for Judicial Reform, the mission of the Philippine judicial system touches on the following key objectives:

- (1) Delivery of speedy and fair dispensation of justice to all;
- (2) Judicial autonomy and independence from political interference;
- (3) Improved access to judicial and legal services;
- (4) Improved quality of external inputs to the judicial process;
- (5) Efficient, effective and continuously improving judicial institutions; and,

(6) A judiciary that conducts its business with dignity, integrity, accountability and transparency (Supreme Court of the Philippines, 2001).

In the Philippines, judicial reforms typically aim to increase credibility, accountability, equitable access across sectors, and efficiency in court system. And these have been the advocacy and reform focus of government and non-government organizations alike (Sereno, 2015). While there is widespread acknowledgement of the need for reforms, there are few empirical analyses of the state of these institutions and the effectiveness of accompanying reform efforts. The objective of the study is to examine possible metrics indicating the efficiency of case resolution, with a focus on those cases reaching the Supreme Court that are linked to land disputes.

In this paper, we add to the existing literature on judicial reforms by developing a unique dataset of Supreme Court land dispute cases in the Philippines spanning 2002 to 2016. We identify 3,103 cases for possible analysis. We analyze this data to develop empirical evidence on the efficiency of the judicial system in adjudicating land disputes. In addition, this study also examines possible patterns linked to these cases, including the win rates of different types of parties engaged

in land disputes. This study is one of the first to leverage such a comprehensive dataset on these types of cases. Specifically, the objectives of this study are:

- To estimate the total approximate size and value of the land assets that have been processed in the court system and the length of time they have been tied up in the court system;
- To analyze the possible factors influencing the speed of resolution of these types of cases, as well as the patterns behind favorable decisions; and,
- 3) To identify the possible judicial reforms that could try to reduce the time these assets are tied up in courts, thus contributing to the release of land assets for productive investments and utilization in the Philippine economy.

We acknowledge that the speed and efficiency of resolution should be balanced with the objectives of promoting due process and achieving good quality court decisions, reflecting fairness and integrity in the judicial system. Nevertheless, we argue here that fairly efficient processes and timely decisions also contribute to the over-all quality of the rule of law, particularly as this contributes to investment growth, job creation and economic development. Long litigation processes adversely affect the confidence in economic and legal relations between parties, and they translate to heavier costs and a "friction" for economic transactions. International evidence also suggests that lengthy trials depress confidence in the justice system.

And by integrating economic concepts and empirical techniques in the analysis of legal processes and outcomes, this paper also offers a more multidisciplinary approach in the analysis of judicial processes and outcomes, providing a richer evidence base from which to appreciate the judicial reform agenda.

The empirical results suggest that some courts are associated with longer periods of litigation (e.g. Regional Trial Courts) and earlier vs later periods do have distinct differences in litigation lengths (i.e. Supreme Court decisions made in later years are likely to have longer litigation period by about 4.8 years for all the samples and six months for disputes on land located in Metro Manila). The parties involved in the dispute also tend to be associated with distinct patterns. Having juridical persons as respondents is associated with a 1 year decrease in litigation period. And when real estate or construction entities are involved, there is an expected increase in litigation period of about 1.74 years. Perhaps more importantly, this paper finds that there appear to be strong incentives for protracted legal battles, particularly since many decisions can be

overturned by higher courts. While the high overturn rate may just be due to the difference in the aspects of the case tried in each court (i.e. lower courts try the facts of the case while the Supreme Court focuses on the procedure and interpretation of the law applied), this may still indicate a resource problem within the system. Having a high overturn rate potentially due to inconsistent interpretation and application of the law in the lower courts could imply that some judges in the lower courts are not knowledgeable to decide on specific cases. This sends a negative signal on the overall quality of decisions, if there is considerable inconsistency in decisions across the judicial pipeline.

Furthermore, litigation of land disputes in Regions VI, Region XI, Region XII, and the ARMM is associated with a longer litigation time. This could signal an issue in terms of financial and human resources as Region VI and ARMM, both having very high coefficients (5-6 years), are at the bottom 8 in regional rankings based on gross regional domestic product per capita. Finally, higher estimated land asset value is also associated with longer litigation periods. From an economic viewpoint, it is possible that because more resources are at stake, then parties in the litigation have greater incentives to try and win despite a protracted case.

The rest of the paper is structured as follows. Section II reviews the related literature on judicial reform and economic development as well as some key highlights in Philippine judicial reforms related to land litigation in the last decade. Section III of the paper then briefly elaborates on the data collection effort; while Section IV provides a descriptive analysis of the dataset. In addition, Section V contains the empirical analysis of the dataset developed in this paper. Finally, Section VI concludes.

I. Review of Related Literature

a. Indicators and factors contributing to judicial inefficiency

The performance of the judicial system can be measured through five indicators (Court, Hyden, and Mease (2003): 1) Access to justice – or the equal protection of all human individuals under the law; 2) Due process or procedural fairness; 3) Autonomy – The ability of judges to carry out their decision without coercion; and the succeeding checks and balances to hold judges accountable for potential misuse of this discretion; 4) Incorporation of international human rights norms – The implementation of signed international treaties on human rights; and 5) Non-judicial mechanisms for settling disputes – The availability of alternative means to settle dispute based on

a country's culture. While the fifth indicator may be problematic due to the involvement of culture biases against certain groups of people, it is still considered an integral part of the judicial arena, especially in developing countries.

Equal access to justice, fiscal autonomy and accountability, and institutional process flow are also some of the areas that judicial efficiency is measured. A decentralized court system allows for disputes and issues to be addressed at the base of the problem without going through the bureaucracy in the central offices. Challenges to judicial reforms in the Philippines include inadequate support and facilities for process improvement and reform. (Asian Development Bank)

The OECD released a report on effective civil justice listing length of litigation as an important attribute of good judicial performance, alongside fair adjudication and judicial independence, certainty of court decisions, and accessibility to the judicial system. A lengthy litigation process discourages confidence in economic and legal relations between parties, burdening those concerned with heavy costs. The study also found that lengthy trials are also associated with a decrease in confidence in the justice system (OECD, 2013).

In their survey of cases in OECD countries, length of trial across all three instances of court litigation ranged from 368 days (in Switzerland) to eight years (in Italy). On average, the length of trial was at 788 days or 2.15 years. Lengthy trials were cited as influenced by both demand and supply conditions. On the supply side, some potential factors for lengthy trials are: the quality and availability of financial and human resources dedicated to the judicial system, the efficiency of the court's process management system and its adoption of new technology, the degree of task specialization, the structure of the courts, and the incentive system for judges and judicial staff. On the demand side, lengthy trials may be influenced by: costs associated with litigation (lawyers' fee, filing fee, etc.), the amount of legal resources and personnel available to those in need, the availability of alternative dispute resolution mechanisms, and the degree of trust and confidence in the law.

Khaitan, Seetharan, and Chandrashekaran (2017) analyzed the relationship between court inefficiency and delay by examining 2011-2015 Delhi High Court records. Based on Indian benchmarks, they segregated delayed cases from normal cases across eight case types. The team identified several types of inefficiencies which were then grouped into two categories: 1) Court-side inefficiencies, e.g. absent judges and inadequate time to hear a case; and 2) Counsel-side inefficiencies, e.g. counsel seeking extra time due to missed deadlines, absent counsel, court-

condoned delay request, and reopening of cases. The researchers found that inefficiencies were more likely to be present in delayed cases versus normal cases. 97% of delayed cases experienced at least one inefficiency throughout their time in court with counsel-side inefficiencies representing 80% of the attributable inefficiencies. Moreover, 70% of these cases involved more than three inefficiencies. On the other hand, only 36% of normal cases were found to experience inefficiencies.

Counsel-side delays could stem from deliberate action from unscrupulous lawyers who are paid per appearance and benefit from lengthy trials. It could also stem from a resource problem--64% of delayed cases involved absent counsels. Counsels were found to be juggling multiple cases at a time, missing court appearances. The researchers recommended that stricter costs on extensive postponements as well as a ceiling for number adjournments should be imposed to combat excessive counsel-side delays. In addition, they recommend assigning counsel unique identification numbers that can track the different cases of each lawyer so as not to assign hearings within the same timeframe. On the other hand, court-side inefficiencies were linked to issues with complicated registry procedures and absent judges.

Brunell, Dave, and Morgan (2009) used jury court data spanning four years and 1,159 trials from Multnomah County, Oregon to examine the time it takes a jury member to deliberate a case. The statistical analysis focused on the hazard function to capture the likelihood that a jury will deliver a verdict in the next short interval of time. The researchers computed the Kaplan-Meir hazard functions by segments identified by binary dummy variable which enabled them to analyze the duration data by specific groups that are of interest or case type. Put simply, these empirical models allowed these analysts to identify some of the factors that best predict expeditious resolution of cases. Given this model, it was found that civil and criminal trials have no significant difference in length of jury deliberation up until the 5th hour mark, wherein civil courts have an increased likelihood to reach a verdict than a criminal trial jury. The hypothesis that the smaller the jury, the faster the deliberation time was validated.

In a multivariate model for criminal trials, it was found that unanimous decisions, guilty verdicts, and higher proportion of jurors with previous jury experience had statistically-significant hazard ratios greater than 1 – meaning that they are characterized by shorter deliberations. On the other hand, cases in which crimes involved were against a person, the number of counts considered

by jury, and number of jurors dismissed during preliminary examination were correlated with shorter deliberations.

Similarly, a multivariate model was applied to civil trials. It was found that only unanimous decisions were significantly correlated with shorter civil trials. On the other hand, liable defendants, amount of damages, and numbers of jurors dismissed during preliminary examination were significantly correlated with longer civil trials.

Over-all the literature traversing both legal and economic analyses is still quite nascent. This suggests that this paper could contribute to a sharper and evidence based understanding of how delays and entanglements in the judicial system could generate significant economic consequences.

II. Data and Methodology

a. Dataset

The objective of the study is to examine the efficiency of case resolution for those cases reaching the Supreme Court that are linked to land disputes. We identified 3,103 cases settled by the SC that were focused on land disputes. The raw data was extracted from publicly available information on these cases, which can be downloaded here: http://sc.judiciary.gov.ph. The following information for each case were encoded:

1. G.R.Number	12. Kind of Lower Court, Branch,
2. Date	Location (City or Municipality),
3. Case Name	Location (Province), Location of Lower
4. Classification	Court
5. Petitioner	13. Issues and Nature of Case
6. Classification	14. Winner – RTC
7. Respondent	15. Winner-CA
8. Nature of Land	16. Winner-SC
9. Land City/Municipality, Land	17. Time of Resolution - RTC
Province, Land Address	18. Time of Resolution - CA
10. Land Size	19. Time of Resolution - SC
11. Land Value	20. Time of Resolution – Other court

However, after reducing duplicates and null values, only 217 cases had complete information (e.g. land value, valuation year, and uniform land value type) necessary for the empirical analysis. To have a substantial sample for the empirical analysis, a zonal value estimation on rows with available land size and land location was implemented. This increased the sample from 217 to over 1400.

Since majority of the land location only includes the disputed land's municipality, median, as a measure of average value, was used to estimate zonal value. By using the median, we expect that it will not be affected by areas with skewed distribution of zonal values.

- For private land, zonal values of residential regular (RR), commercial regular (CR), and industrial land (I) were considered.
- For agricultural land, median of the zonal values of all agricultural land types (A1 – A50) were used.
- For commercial land, commercial regular (CR) was used.
- For residential land, residential regular (RR) was used.
- For other land types which cannot be associated to available information on land types in the BIR data, the zonal value was not estimated.

If the location contains information on the specific name of the barangay where the land is located, the median value of the zonal values for that barangay was used. Moreover, if the location contains details at the smallest unit (i.e. street or sitio), zonal value of that specific location was used as an estimate. However, when the street or sitio is specified on the original data set but is unavailable on the BIR data set, the median of the zonal values for the municipality / city was used instead.

By using zonal value estimation, the sample size was able to go up to 1,409 observations or 45% of the original encoded dataset. With this adjusted sample, key patterns related to judicial reform were uncovered.

b. Methodology

The empirical analysis will seek to answer several questions: 1) What factors affect the length of litigation for land trials?; and 2) What factors determine the win rate of petitioners in land trials? In order to address the first question (Model 1), we will employ a multivariate pooled

regression with dummy variables for the land location regions to account for the differences within the regions where the lands disputed are located.¹

A logistic regression will be used to estimate the likelihood that the case petitioner will win at the Supreme Court level (Model 2). Like the first equation, dummy variables for land location regions will be used to control for behavioral differences within regions.

a. Dependent Variables

For model 1, total land litigation time serves as the dependent variable. This variable, expressed in years, refers to the sum of the litigation time per court-level (Regional Trial Court, Court of Appeals, Supreme Court, and other courts) based on the recorded cases. The expectation is that land litigation time is directly correlated with land size and total zonal value.

For model 2, the winner at the SC level is the binary outcome variable. This represents the winner of the case at the last stage of litigation or at the highest level in the court system. Winner at the SC level is coded as "1" if the winner is the petitioner and as "0" if the winner is the respondent. The hypothesis is that the judicial classification of the parties involved affect win rate; That is, juridical persons could have a higher chance at winning at the SC level than natural persons. For the layman, juridical persons refer to entities created by law that are recognized as having a distinct selfhood, legal character, and duties and rights. On the other hand, natural persons refer to individual human beings. Moreover, having won at the lower courts (RTC and CA) could increase the likelihood of winning at the SC. This is likely due to the structure and scope of each court. The lower courts deal with the facts of the case while the Supreme Court focuses on the legal interpretation done.

b. Explanatory Variables Used

 Land region – Land regions are coded based on the Philippine Standard Geographic Code. There are 17 regions in the dataset, namely: Cordillera Administrative Region, Region I (Ilocos Region), Region II (Cagayan Valley), Region III (Central Luzon), Region IV-A (CALABARZON), MIMAROPA, Region V (Bicol Region), Region VII (Central Visayas), Region VIII (Eastern Visayas), Region IX (Zamboanga Peninsula, Region X

¹ A fixed effects model was not used as the panel data currently has more than one observation for a disputed land location in each given year for select regions like National Capital Region and Central Luzon which the model does not allow for. Using the disputed land city or province also produces the same issues.

(Northern Mindanao), Region XI (Davao Region), Region XII (SOCCSKSARGEN), Region XIII (Caraga), and ARMM. Another category is added to represent the four cases which have land located in multiple regions. Each region is treated as a dummy variable.

- Log of land size The logarithmic of the land size is used to account for the large variation across the sample.²
- Log of Total Zonal Value Total zonal value refers to the product of land size and the zonal value per square meter. The logarithm of the total zonal value is used to account for the large variation across the sample.³
- Lower Court Type Lower court type refers to the court in which the case was first filed. This variable is split into three dummy variables, namely: 1) Regional Trial Court; 2) Municipal Court; and, 3) Other lower courts.
- Year Year refers to the year the Supreme Court released its decision on the case. This ranges 2002 to 2016.
- Case Issue Category Case issue category refers to the main category of the issue in dispute. This variable is split into three dummy variables, namely: 1) Civil; 2) Criminal; and, 3) Others unspecified.
- Petitioner entity Petitioner entity is coded as "1" if the petitioner is a juridical person or a non-human entity and as "0" if the petitioner is a natural person.
- 8. Respondent entity Respondent entity is coded as "1" if the petitioner is a juridical person or a non-human entity and as "0" if the petitioner is a natural person.
- 9. Realty involved Cases in which a realty or construction entity is involved is coded as "1" and as "0" if otherwise. Realty / construction-related entities are identified based on their names on the case files if the entity has the name "land", "realty", "construction", and/or "development" on its name without being a bank, then it is considered a realty/ construction-related entity.

² By applying the logarithmic form of land size, the variance falls from 511,078,009,241,549.00 to 1.50, making the analysis much more tractable.

³ By applying the logarithmic form of land size, the variance falls from 339,936,072,049,392,000,000 to 1.51.

- 10. Winner at RTC As some cases in RTC are immediately passed on to the CA or SC, there will be three dummy variables for representing the outcomes of RTC case deliberation. The winner could be the respondent or petitioner, or it could passed on to the higher courts.
- 11. Petitioner Win at CA As some cases in CA end up with a split-decision or is immediately passed on to the SC, there will be three dummy variables for representing the outcomes of CA case deliberation. The winner could be the respondent or petitioner, or it could be a split-decision/passed on to the Supreme Court.
- 12. Petitioner Win at SC Petitioner win at SC is only used as an explanatory variable for Model 1. As this is the last stage in court litigation process, there are only two possible outcomes – petitioner winning ("1") or respondent winning ("0").
- Total Length of Litigation Total length of litigation is only as an explanatory variable for Model 2. It is the sum of all years spent in the court system.

III. Descriptive Analysis

Table 1. Summary Statistics

Variable	Observation	Maan	Std.	M:	Max
variable	S	wiean	Dev.	NIIN	Max
Total Time in Court	1,409	12.574	7.19	1	66
Time in RTC	1,409	3.804	4.426	0	39
Time in CA	1,409	3.411	2.83	0	23
Time in SC	1,409	4.653	2.656	0	18
Time in Main Courts	1,409	11.847	6.496	0	47
Time in Other Courts	1,409	0.726	3.367	0	42
Land Size in sqm ('000)	1,409	1,477.41	22,600	3.494	755,00
Log of Land Size	1,409	8.817	2.819	1.251	20.443
Total Land Value ('000,000)	1,409	1,790	18,400	8.736	400,00 0
Log of Total Land Value	1,409	16.266	2.83	2.167	26.715
Disputed Land Region					
1	1,409	0.06	0.237	0	1
2	1,409	0.028	0.166	0	1
3	1,409	0.12	0.325	0	1
4-A	1,409	0.19	0.393	0	1
5	1,409	0.048	0.213	0	1
6	1,409	0.057	0.231	0	1
7	1,409	0.091	0.287	0	1
8	1,409	0.018	0.135	0	1
9	1,409	0.012	0.109	0	1
10	1,409	0.031	0.172	0	1
11	1,409	0.028	0.164	0	1
12	1,409	0.014	0.118	0	1
MIMAROPA	1,409	0.014	0.118	0	1
NCR	1,409	0.245	0.43	0	1

CAR	1,409	0.023	0.151	0	1
ARMM	1,409	0.008	0.088	0	1
13	1,409	0.011	0.103	0	1
Lower Court					
Municipal Courts	1,409	0.108	0.31	0	1
Regional Trial Court	1,409	0.835	0.371	0	1
Year	1,409	2,008.98	4.096	2002	2016
Case Issue Category					
Civil	1,409	0.996	0.059	0	1
Criminal	1,409	0.002	0.046	0	1
Juridical Person as Petitioner	1,409	0.282	0.45	0	1
Juridical Person as	1 400	0 264	0 441	0	1
Respondent	1,409	0.204	0.441	0	1
Private Land Disputed	1,409	0.994	0.08	0	1
Winner in RTC					
Respondent	1,409	0.714	0.452	0	1
Petitioner	1,409	0.284	0.451	0	1
Winner in CA					
Respondent	1,409	0.96	0.197	0	1
Petitioner	1,409	0.011	0.106	0	1
Petitioner Win in SC	1,409	0.355571 3	0.478856	0	1
Realty Involved	1,409	0.099	0.298	0	1

Source: Authors' analysis based on data from the Supreme Court of the Philippines.

a. Length of litigation, land size, and land value

Table 1 shows the summary statistics for all the variables used in the two models. Total time in court can last for as short one year (over a 367 square-meter lot in Quezon City) to 66 years (over a 10,000 square-meter lot in Quezon City). Majority of the time in court is spent at the Supreme Court, based solely on the mean. However, time in the Regional Trial Courts has a

standard deviation that is almost double that of time spent in the Supreme Court, suggesting that there is an increased likelihood that the chokepoint could be at the RTC level.

The sizes of land included in the sample average about 1.5 million square meters with a standard deviation of 22.6 million. When the logarithm form is applied, the mean lowers down 8.817 while the standard deviation becomes 2.819. As seen on Table 2, cases in which juridical entities are involved have about a 57% higher mean and 38% higher standard deviation than the overall sample. This could be due to higher degree of disputes on large tracts of private and agricultural land.

Category	Observation s	Mean	Std. Dev.	Min	Max
Overall	1,409.00	1,477,416.00	22,600,000	3.49	755,000,00 0
Top 4 Regions	910.00	1,477,415.90 3	22,607,034.5 1	3.494 5	755,450,00 0
Juridical entity involved	622.00	2,351,299.00	31,300,000	6.00	755,000,00 0
Real estate entity involved	139.00	1,391,079.00	8,097,442	15.81	88,600,000

Table 2. Land Size, in square meters (2002-2016)

Source: Supreme Court of the Philippines.

Total zonal land value has an average of about 1.79 billion pesos with a standard deviation of 18.4 billion. The zonal land value is estimated using the latest effectivity dates set by the Bureau of Internal Revenue's Directive Order for the implementation of the zonal values. Effectivity dates are deemed important because zonal values across Philippine municipalities and cities are based on different time periods; some were revised a year ago, and some were revised more than a decade ago. When the logarithm form is applied, the mean lowers down 16.266 while the standard deviation becomes 2.83. As seen on Table 3, total land value is much higher when juridical entities (by 72%) and real estate entities (221%) are involved.

Category	Observation				
	S	Mean	Std. Dev.	Min	Max
Overall	1,409	1,790.00	18,400	0.00	400,000
Top 4 Regions	910	2,070.00	19,400	0.02	400,000
Juridical entity					
involved	622	3,070.00	26,000	0.01	400,000
Real estate entity					
involved	139	5,750.00	37,300	0.06	400,000

Source: Supreme Court of the Philippines.

a. Land location and nature of land

25% of the cases filed involved land assets within Metro Manila. This is followed by Region IV-A (19%), Region III (12%), and Region 7 (9%). A heatmap of the land cases filed per region is shown below. It is also worth noting that 95% of the cases involved were filed in the same region where the disputed land is located.

Figure 1. Heatmap of cases filed according to region of disputed land, PH (2000-2016)



Source: Supreme Court of the Philippines.

Note: Number of observations is larger than the number of cases in the dataset due to the existence of four cases with disputed land in multiple regions.

Natara afterna	Overall	NCR Only	Juridical entity	Real estate entity
Nature of Land	(n=1,409)	(n=910)	involved (n=622)	involved (139)
Public Land	0.63%	0.67%	1.12%	0.72%
Foreshore	0.07%	0.11%	0.00%	0.00%
land	0.0770	0.1170	0.0070	0.0070
Forest land	0.07%	0.00%	0.16%	0.00%

Table 4. Nature of Land of Disputed Cases, By category (2002-2016)

TOTAL	100%	100%	100%	100%
private land	02.0170	05.7170	0270	/0/0
Unspecified	82 61%	83 41%	87%	78%
land	1.51/0	1.00/0	070	J / 0
Residential	7 31%	7 80%	6%	50/2
land	2.34/0	5.0070	4/0	/ /0
Commercial	2 34%	3 08%	4%	7%
land	/.10/0	5.0570	/ / 0	270
Agricultural	7 10%	5.05%	7%	9%
Private land	99%	99%	99%	99%
public land	0.2070	0.3370	0.7070	0.7270
Unspecified	0.28%	0 33%	0.48%	0.72%
Mineral land	0.07%	0.00%	0.16%	0.00%
land	0.1470	0.2270	0.3270	0.0070
Government	0 1494	0 220/	0 220/	0.00%

Source: Supreme Court of the Philippines.

There is not much difference in the distribution of cases according to land type and sample as seen on Table 4. Over 99% of the disputed lands for each category were private land. For cases involving juridical entities, the share in land disputes for public land is slightly higher at 1.12%, because of a higher share in government land and unspecified public land.

b. Lower court location, legal entities involved

As shown in Table 1, 84% of cases were first filed at lower courts while only 10% were filed at in municipal courts (Metropolitan Trial Court, Municipal Trial Court in Cities, Municipal Trial Courts, and Municipal Trial Court Circuits).

Legal Entity	Overall (n=2,818)	Top Four Regions (n=1820)	Juridical entity involved (n=1244)	Real estate entity involved (278)
Juridical	27%	30%	62%	69%
Petitioner	14%	15%	32%	30%
Respondent	13%	15%	30%	40%
Natural	73%	70%	38%	31%
Petitioner	36%	35%	18%	20%
Respondent	37%	35%	20%	10%

Table 5. Legal Parties (2002-2016)

Source: Supreme Court of the Philippines.

Note: sample sizes are doubled because there are two possible roles in one case.

Respondent

10%

16%

Ν

18%

56%

Table 6.1 Distribution of Cases perCase Scenario, Overall (2002-2016)

(n=1,409)

J

Legal

Entity

J

Ν

Petitioner

Table 6.2 Distribution of Cases perCase Scenario, Top 4 Regions

(2002-2016) (n=910)

		Respondent		
	Legal			
	Entity	J	Ν	
ıer	J	12%	18%	
etition	N	170/	50 0/	
Ā	N	1/%	52%	

Table 6.3 Distribution of Cases perCase Scenario, Juridical entityinvolved (2002-2016) (n=622)

	Respondent		
Legal			
Entity	J	Ν	

Table 6.4 Distribution of Cases per

Case Scenario, Real estate/construction entity involved

(2002-2016) (n=139)

	Respondent		
Legal			
Entity	J	Ν	

ner	J	24%	40%
Petitior	N	36%	0%

ner	J	42%	17%
Petitior	N	37%	4%

Source: Supreme Court of the Philippines.

Table 5 shows the breakdown of cases according to the actors involved. As each case has two parties (respondent and petitioner), sample size is doubled. Natural person refers to an individual human being while juridical persons refers to non-human legal entities like organizations or corporations. 73% of all cases had natural persons as the parties involved. As expected, for the last two columns on Table 5, the composition is reversed as we specifically filtered the dataset to feature mostly juridical persons. Further, juridical persons in cases where either party is juridical (Column 3) or where either party is in real estate (Column 4), are twice as likely to be petitioners than respondents.

Tables 6.1 and 6.2 show a similar story: Over 50% of cases filed were between two natural persons. Over a third of the cases filed involved a juridical entity against a natural person, either as a petitioner or respondent. Table 6.3 reiterates the earlier observation that juridical persons are likely to take the petitioner role in the natural person vs juridical person dynamic. Cases, where juridical persons represent both petitioner and respondent are only at 10%. This is much different from Table 6.4 where a real estate/construction entity involved. Almost half (42%) of the cases in the subset have juridical entities as both respondent and petitioner. In cases where only one of the two parties is a juridical person, the juridical entity, as in Table 6.3, is slightly more likely to take the petitioner's position.

99% of all cases filed were civil cases (Table 1). Table 7 in the appendix shows a more detailed breakdown of nature of cases. There are three main classifications of these cases: civil, criminal, political, others. 63% of all cases were civil cases disputing: 1) procedure (43%); 2) validity of sale or mortgage (11%); and 3) ownership of property (9%).

a. Win Rate



Source: Supreme Court of the Philippines.

Figures 2.1-2.4 illustrate the win rate of each party, in four different scenarios: 1) When petitioner and respondent can be a juridical or natural person; 2) When the real estate/construction entity acts as a petitioner or respondent against a non-real-estate entity; 3) When a juridical person acts as a petitioner against a natural person; and 4) When a juridical person acts as a respondent against a natural person; and 4) When a juridical person acts as a respondent against a natural person. In Figure 2.1, it can be seen that overall, the win rate of respondents was higher than petitioners at every level in court except at the SC level. The respondent's win rate was at its peak at the CA-level then falls by about 33% once at the SC level.

It is worth noting that the respondent's win rate at SC level is 30% lower than at the RTC level. If we look at each case decision overturned from RTC to SC level, there are about 34% or 1,037 land cases rulings that were overturned at the Supreme Court Level. Of this number, 62% were in favor of the petitioner.⁴ On the other hand, petitioner win rate increases by about 28% from RTC-to SC-level. These patterns imply a very strong incentive for protracted legal battles, particularly since many decisions can be overturned by higher courts. This also does not wager well for the over-all quality of decisions, if there is considerable inconsistency in decisions across the judicial pipeline.

For cases involving real estate (Figure 2.2), we see an improvement in the win rate of petitioners. Win rate at RTC and SC level is higher by 36% and 33%, respectively.

Similarly, in a scenario where the natural person is a petitioner against a juridical person respondent (Figure 2.3), respondents still experience an advantage. Respondents at the beginning had a win rate of 62% followed by a 94% win rate at CA level. At the SC level, respondents have a 72% chance of a favorable decision, 12% higher than average. Juridical persons are able to maintain a higher win rate all throughout the stages in the court system.

When roles were reversed, with the juridical person as petitioner, its win rate is lower by about 47% than when the petitioner is a natural person. Its win rate at the RTC level is also 28% lower than average. The win rate sinks further to just 2% once at CA level and recovers to achieve a win rate of 52% at SC level.

From the above figures, it could be gleaned that juridical entities may be experiencing more of an advantage as the length of litigation increases and as the case moves up to the higher courts. Possible reasons for these are as follows: 1) Juridical persons have an easier time bearing the cost burden associate with lengthy litigation time and higher costs as the case moves up the courts; and 2) The increased win rate at SC level (and corresponding decisions overturned) in favor of the petitioner and/or the juridical person may be due to inconsistent interpretation of the law at the lower courts. This can lead to the judges overturning the decision once it reaches the Supreme Court. It is possible that lower court judges aren't experts in the matter, a weakness of the current judicial system.

⁴ Sample size for this is 3,046. This is based on all the Supreme Court case decisions filed from 2002 to 2016 that had either respondent or petitioner as the winner at the RTC level.

IV. Empirical Analysis

a. Length of Litigation

Table 8 shows the results of the estimation for the first model. The model begins by just estimating the length of litigation based on the log of the land size, log of the land value, the disputed land regions, the lower court classification, and the year. In the next iterations, case category, petitioner and respondent entity, land category, winner at the three court stages, and involvement of real estate/construction entities were added gradually. Model G reduces the sample to just those with disputed land located in NCR.

The model can only explain for at most 12% of the outcome variable (length of litigation). The low R-squared indicated the need to re-specify the estimation model so that it caters better to the type of data (panel data but with multiple observations per year and per region). In addition, the current dataset does not identify the cause of delay or inefficiency. Being able to account for the counsel- and court-side inefficiencies can help estimate the model better. Despite this, the results still enable us to glean the basic relationship between our outcome variable and the explanatory variables available.

Up until the last version of the model, the log of the total land value was significantly and positively correlated to a longer litigation time at the 90% confidence level. As seen in Table 1 Model E, a 10% increase in the total land value is associated with an increase of 0.0023 years or about 1 day in litigation time. Interestingly, land value is inversely correlated with litigation time for cases with disputed lands in NCR.

Another interesting finding is that Region II, Region VI, Region VIII, Region XII, and the ARMM are associated with a longer litigation time in varying confidence levels. All regions are at the bottom 8 in regional rankings based on gross regional domestic product per capita. This could explain why both have very high coefficients (5-6 years in Table 1 Model D). These regions may have issues in terms of investment in the judicial system's infrastructure or the lack of financial and human resources to facilitate faster litigation. Upon checking with the Office of the Court Administrator, there have been zero land litigation cases filed in the ARMM region in the last decade. This can support our hypothesis that there is a deficiency in financial resources in that region that can delay litigation or worse, dissuade people from filing cases within the region.

As seen across all models, cases filed with municipal courts first are associated with a litigation period that's shorter by about 4.8 years. Cases filed with RTC first are associated with a

slightly longer litigation period by about two years compared to those filed at municipal courts. Supreme Court decisions made in later years are likely to have longer litigation period by about 4.8 years for all the samples and six months for disputes on land located in Metro Manila.

Having juridical persons as respondents is associated with a 1 year decrease in litigation period for Table 1 Model F. This could be because juridical respondents are likelier to win litigation cases and have more power to hasten the litigation process.

When real estate or construction entities are involved, there is an expected increase in litigation period of about 1.74 years (Table 1 Model F). This is likely because the average value of disputed land in cases where real estate or construction entities are involved is 221% higher than the average for all cases. This is validated by the loss of significance of the log form of land value once the real estate entities are involved. The latter binary variable assumes the role of the land value in signifying the effect of large land values. Having a higher mean land value could prolong the legal process as there are greater incentives to prolong the dispute (e.g. more resources at stake); and there are possibly more technicalities to consider for larger tracts of land. Further, as more assets are at stake, it is likelier that either party would try to delay the litigation process rather than run the risk of losing the property.

Variable	Model A	Model B	Model C	Model D	Model E	Model F	Model G (NCR only)
Log of Land Size (in sqm)	0.016	0.006	0.017	0.027	0.029	0.038	0.861**
Log of Total Land Value (in							
PHP)	0.217*	0.222*	0.243*	0.238*	0.230*	0.206	-0.081**
Disputed Land Region							
1	3.184**	3.145**	2.977*	3.011*	1.917	1.573	
2	5.899**	5.873**	5.660**	5.682**	4.569*	4.188	
3	3.794**	3.763**	3.571**	3.6**	2.438	2.043	
4	3.603**	3.605**	3.541**	3.593**	2.427	2.057	
5	4.511**	4.520**	4.353**	4.379**	3.232	2.800	
6	5.855***	5.829***	5.649***	5.708***	4.594**	4.252*	
7	4.006**	3.986**	3.878**	3.898**	2.846	2.393	
8	5.306***	5.292***	5.098**	5.121**	3.987	3.607	
9	4.657**	4.636**	4.405**	4.427**	3.218	2.670	
10	4.497**	4.445**	4.396**	4.418**	3.271	2.900	
11	2.557	2.529	2.394	2.546	1.593*	1.141	
12	5.112***	5.084***	5.070***	5.087***	3.949	3.605	
13	3.097	3.62**	2.851	2.870	1.696	1.338	
NCR	3.626**	3.618**	3.558***	3.622**	2.594	2.115	
CAR	3.842*	3.818*	3.680*	3.711*	2.680	2.241	
ARMM	6.829*	6.78**	6.529**	6.554**	5.349*	5.012	
MIMAROPA	5.405**	5.39**	5.315**	5.324**	4.283	3.791	
Lower Court							
Municipal Courts	-4.645***	-4.810***	-4.829***	-4.796***	-4.700***	-4.794***	-0.958***

Table 8. Model 1: Factors affecting length of litigation

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Regional Trial Court	-2.673**	-2.882***	-2.874***	-2.842**	2.713**	-2.770**	-0.700***
Year	0.434***	0.435***	0.439***	0.438***	0.443***	0.447***	0.044***
Case Issue Category							
Civil		1.854**	1.709**	1.720**	1.578**	1.306*	-0.789***
Criminal		-4.851***	-5.174***	-5.152***	5.281***	-5.472***	
Petitioner entity			-0.114	-0.089	-0.046	0.236	-0.082
(0 = Natural, 1 = Judicial)							
Respondent entity			-0.677	-0.665	-0.636	-1.040**	-0.091
(0 = Natural, 1 = Judicial)							
Private land				2.578*	2.266*	2.030	0.249*
(0 = Public, 1 = Private)							
Winner at RTC							
Respondent					-3.603	-3.677	
Petitioner					-3.347	-3.419	
Winner at CA							
Respondent					3.560***	3.718***	
Petitioner					2.026	2.112	
Winner at SC							
$(0 = Respondent \ 1 =$							
Petitioner)					-0.578	-0.593	
Real Estate entities involved						1.740**	0.374***

 $(0 = Yes \ 1 = No)$

Constant	-864.049***	-868.885***	-876.533***	-875.932***	-885.384***	-892.476	-84.68***
R-Squared	0.103	0.105	0.105	0.107	0.117	0.121	0.155
F-Statistic	8.42	10.97	10.10	10.97	10.44	10.99	10.97
P-Value	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Number of Observations	1409	1409	1409	1409	1409	1409	345

Notes:

1) Standard errors are robust

2) Probabilities: p < 0.10=*; p < 0.05 = **; p < 0.01=***

b. Win Rate at SC Level

Table 9 shows the results of the estimation for the second model. The model begins by just estimating the likelihood of the petitioner winning based on the total litigation time, log of the land size, log of the land value, the disputed land regions, the lower court classification, and the year. In the next iterations, case category, petitioner and respondent entity, land category, winner at the first two court stages, and involvement of real estate/construction entities were added gradually.

All models have statistically significant p-values below 90% confidence level. However, the model is only able to correctly predict the outcomes 66% of the time. This is an indication to consider augmenting the dataset further and include the case issues indicated at every stage in the litigation lifecycle and explore different specifications to the logistic model.

The signs and significance of the coefficients are consistent across the models in Table 2, Basing from Table 2 Model E, Petitioners were much likelier to lose in Regions 1 through 4, 7 through 11, Region 13, CAR, and MIMAROPA. The coefficient is highest for Region 13. It is hard to say for certain what the reason is the worse odds for petitioners in these regions as majority of the cases were between two natural persons and the case issue and land type distribution are consistent with the rest of the sample.

As the year in which the Supreme Court releases its verdict on the land dispute cases increases, the likelihood of winning by the petitioner also increases. This is interesting as our summary statistics show that overall, Supreme Court decisions are less favorable towards petitioners than they are to respondents. It is possible that in recent years, there has been a change in how the courts have tried the cases. For example, the consistency in the interpretation of the law from lower court to Supreme Court was improved, reducing the overturn rate from CA- to SC-level. However, this is difficult to fully conclude given the limits of our study which disables us to go through the merits of each of the 1,409 cases in the dataset.

Being a juridical person increases the log-odds of petitioners winning by 0.771 as shown in Models C-E on Table 2. All have statistically significant and positive coefficients. Alternatively, having a juridical person as the respondent to your petition reduces your likelihood to win by about 0.550 units.

The winner at the RTC level, despite bearing a negative coefficient, is not statistically significant enough to predict the win rate at SC level. However, if the respondent wins at the CA level, the likelihood of petitioners winning at the SC level decreased by 0.791 units.

Variable	Model A	Model B	Model C	Model D	Model E
Total length of litigation (in years)	-0.013	-0.012	-0.013	-0.012	-0.013
Log of Land Size (in sqm)	0.057	0.056	0.046	0.055	0.056
Log of Total Land Value (in PHP)	-0.050	0.050	0.046	-0.051	-0.053
Disputed Land Region					
1	-2.267*	2.268*	-2.190*	-2.317**	-2.341**
2	-2.132**	-2.132*	-2.089*	-2.065*	-2.090*
3	-2.037*	-2.037*	-1.981*	-2.064*	-2.092*
4	-2.056*	-2.057*	-1.985*	-2.026*	-2.052*
5	-1.772	-1.780	-1.725	-1.793	-1.825
6	-1.795	-1.795	-1.709	-1.785	-1.809
7	-1.737	-1.737	-1.777	-1.853*	-1.886*
8	-2.505**	-2.505**	-2.417**	-2.464**	-2.491**
9	-2.024	-2.02	-1.949	-1.999	-2.038*
10	-2.182*	2.181*	-2.137*	-2.191*	-2.216*
11	-2.100*	2.100	-2.065*	-2.141*	-2.176*
12	-1.784	-1.783	-1.6543	-1.825	-1.847
13	-2.786**	2.786**	-2.829**	-2.920**	-2.946**
NCR	-1.680	-1.679	-1.646	-1.678	-1.712
CAR	2.120*	-2.121*	-2.014*	-2.132*	-2.161*

Table 9. Model 2: Factors affecting petitioner wins at Supreme Court

ARMM	-2.095	-2.095**	-2.129	-2.122	-2.145
MIMAROPA	2.043	2.044	-2.049*	-2.112*	-2.148*
Lower Court					
Municipal Courts	-0.045	-0.041	-0.048	-0.0391	-0.048
Regional Trial Court	0.091	0.094	0.078	0.071	0.067
Year	0.062***	0.062***	0.056***	0.035**	0.036**
Case Issue Category					
Civil		-0.538	-0.499	-0.865	-0.886
Criminal		-0.681	-0.808	-0.868	0.884
Petitioner entity			0.623***	0.786***	0.771***
(0 = Natural, 1 = Juridical)					
Respondent entity			-0.371**	-0.518***	-0.550***
(0 = Natural, 1 = Juridical)					
Private land			0.245	-0.207	-0.226
(0 = Public, 1 = Private)					
Winner at RTC					
Respondent				-1.657	-1.662

Petitioner	-0.618	-0.624
Winner at CA		
Respondent	-0.805**	-0.791**
Petitioner	0.135	0.143

Real Estate entities involved

 $(0 = Yes \ 1 = No)$

Constant	-123.66***	-123.12***	-110.430***	-66.474**	-67.188**
Pseudo R-Squared	0.019	0.019	0.019	0.073	0.074
P-Value	0.062	0.062	0.062	0.062	0.062
Percent Correctly Predict	65.36%	64.80%	66.20%	66.36%	66.220
Number of Observations	1409	1409	1409	1409	1409

Notes:

1) Standard errors are robust

2) Probabilities: p < 0.10=*; p < 0.05 = **; p < 0.01=***

0.135

V. Conclusion

The study sought to develop and examine a unique dataset of Supreme Court land dispute cases in the Philippines from 2002 - 2016. As this is one of the first studies to explore the litigation records in the country, it was able to analyze the factors affecting land litigation length, win rate, and the impact of land dispute cases based on the location and value of the assets involved and the parties in the different cases.

After processing 3,103 cases of Supreme Court data, the sample was narrowed down to 1,409 with complete information on the estimated land value (through zonal value estimation), land size, land location, litigation time, and win rate across the case lifecycle. The data shows that the average size of the land asset tried in court is about 1.477 million square meters and valued at about P1,790,000,000. The land assets can be tied up in the court system from anywhere between 1-66 years, averaging about 12.574 years in litigation. About 99% of the 1,409 land assets in dispute are private land. This means that majority of the land assets in litigation stayed dormant for about 12 years instead of being developed for residential, agricultural, and commercial needs.

Two estimation models were used: 1) A multivariate OLS estimation to understand the relationship between litigation time and the land attributes, case attributes, and the actors involved in the dispute; and 2) A multivariate logistic estimation to help predict the winner in the Supreme Court case decision.

Based on the first estimation model, it was found that Regions II, VI, VIII and XII, and the ARMM are associated with a longer litigation time. This could signal an issue in terms of financial and human resources as all regions are at the bottom 8 in regional rankings based on gross regional domestic product per capita. The lack of funds may be related to smaller manpower (law clerks, counsels, judges, etc.) and reduced court infrastructure that can make the current judicial system in these regions slower.

Higher estimated land asset value is also positively correlated with litigation time. Similarly, cases involving real estate/construction entities were associated with longer trials. This could be because cases involving juridical entities and real estate/construction entities, on average, dealt with assets valued about two to three times above the average estimated asset value for the entire sample.

In the second estimation model, it was found that, petitioners are more likely to lose at the SC level in cases involving land located in Regions 1 through 4, 7 through 11, Region 13, CAR,

and MIMAROPA. More importantly, being a juridical person increases the likelihood of the petitioner to win by 0.771 units while having a juridical person as the respondent reduces the likelihood of the petitioner to win by 0.550 units. The winner at the CA level also significantly affects the outcome at SC level. If the respondent wins at the CA level, the likelihood of petitioners to win at the SC level decreases by 0.791 units.

The results of the second estimation model open a whole new set of question with regard to the winnability of cases depending on the actors involved. Why do juridical entities have a strong advantage in the current court system? Is it because of their ability to prolong litigation, or their access to larger financial resource and stronger legal counsels? These are questions that are best answered by diving even deeper into the case records as will be indicated in the next section.

Moreover, the results of the litigation time estimation model show that the lifecycle of land disputes are largely determined by the location of assets involved and by extension, where they were filed. It is worth examining further the specific causes of delay and whether or not longer litigation time is due to court-side or counsel-side inefficiencies so that policies can be implemented to address these inefficiencies.

For future research, it would be recommended that the encoded dataset is augmented even further, showing the case issues per stage in the litigation lifecycle. In addition, if the dataset can also be merged with an existing timeline of judicial reforms in the country, future researchers will be able to evaluate the policies' effectiveness in improving litigation efficiency. It would also be beneficial for policy-makers within the judicial system to draw up and implement litigation lifecycle benchmarks based on ideal length of procedures involved so that researchers are able to segregate delayed cases from normal cases. A standardized template for court decision reports will also allow future policy researchers to gather a consistent set of information across court decisions that are required for future research.

In terms of empirical models used, it is advisable to explore new model specifications that can help address the unique distribution of this panel dataset. As there are multiple cases filed within a region for a given year, a fixed effects regression model could not be used.

Appendix

Table 7. Nature of Cases, in number of case and percentage share(2002-2016), n=1,409

		Percentage
Nature of Case	Number	Share
Others	4	0.28%
Others	2	0.14%
Civil	1404	99.65%
Others	71	5.04%
Quieting of Title	5	0.35%
Succession	4	0.28%
Enactment of Right of Way	8	0.57%
Reconstitution of Title	11	0.78%
Rescission of Contract	5	0.35%
Partition	11	0.78%
Cancellation of Contract/Title	11	0.78%
Recovery of Possession	12	0.85%
Validity of Mortgage	11	0.78%
Land classification	12	0.85%
Determination of just compensation	20	1.42%
Possession	23	1.63%
Validity of contract, lease, etc.	34	2.41%
Land Registration	52	3.69%
Expropriation	47	3.34%
Reconveyance	43	3.05%
Ejectment	49	3.48%
Agrarian	22	1.56%
Contractual	70	4.97%
Ownership of Property	132	9.37%
Validity of Sale or Mortgage	150	10.65%
Procedural	601	42.65%

Criminal	3	0.21%
Others	1	0.07%
Validity of Sale or Mortgage	1	0.07%
Procedural	1	0.07%
Total	1409	100.00%

Source: Supreme Court of the Philippines

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